



Mi Universidad

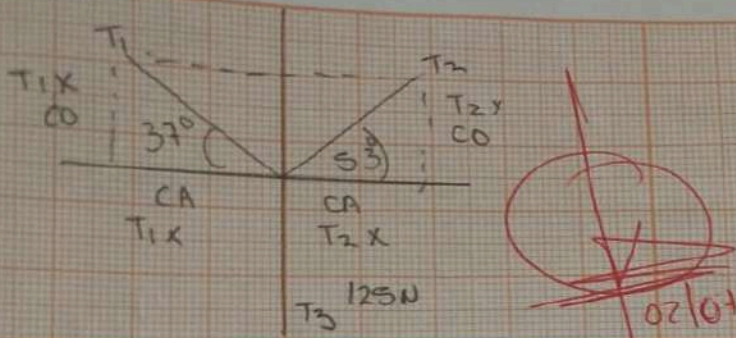
NOMBRE DEL ALUMNO: ERVIN ALTAMIRANO JIMÉNEZ PARCIAL: 3RO

NOMBRE DE LA MATERIA: ESTÁTICA PARA LA ARQUITECTURA

NOMBRE DEL PROFESOR: ARQ. PEDRO ALBERTO GARCIA LOPEZ

NOMBRE DE LA LICENCIATURA: ARQUITECTURA

CUATRIMESTRE: 3RO



$$\text{Sen } 37^\circ = \frac{T_{1y}}{T_1} \longrightarrow T_{1y} = T_1 (\text{Sen } 37^\circ)$$

$$\text{Cos } 37^\circ = \frac{T_{1x}}{T_1} \longrightarrow T_{1x} = T_1 (\text{Cos } 37^\circ)$$

$$\text{Sen } 53^\circ = \frac{T_{2y}}{T_2} \longrightarrow T_{2y} = T_2 (\text{Sen } 53^\circ)$$

$$\text{Cos } 53^\circ = \frac{T_{2x}}{T_2} \longrightarrow T_{2x} = T_2 (\text{Cos } 53^\circ)$$

ΣF_x

$$T_2 (\text{Cos } 53^\circ) - T_1 (\text{Cos } 37^\circ)$$

$$T_2 (\text{Cos } 53^\circ) = T_1 (\text{Cos } 37^\circ)$$

$$T_2 = \frac{T_1 \text{Cos } 37^\circ}{\text{Cos } 53^\circ}$$

$$T_2 = 1.32 \cdot T_1$$

ΣF_y

$$T_1 (\text{Sen } 37^\circ) + T_2 (\text{Sen } 53^\circ) - 125\text{ N} = 0$$

$$T_1 (\text{Sen } 37^\circ) + (1.32 \cdot T_1) \text{Sen } 53^\circ - 125\text{ N} = 0$$

$$T_1 (0.6) + (1.32 \cdot T_1) 0.79 - 125\text{ N} = 0$$

$$T_1 \cdot 0.6 + 1.04 \cdot T_1 - 125\text{ N} = 0$$

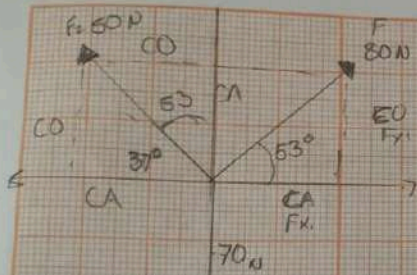
$$(T_1 \cdot 1.64) - 125\text{ N}$$

$$T_1 = \frac{125\text{ N}}{1.64} = \underline{\underline{76.21\text{ N}}}$$

$$T_2 = 1.32 (76.21) =$$

$$T_2 = \underline{\underline{100.59\text{ N}}}$$

74
72



$$\text{Sen } \theta = \frac{\text{CO}}{H}$$

$$\text{Sen } 53^\circ = \frac{F_y}{60 \text{ N}}$$

$$F_y = 60 \text{ N} (\text{Sen } 53^\circ) = 63.896 \text{ N}$$

$$\text{Cos } \theta = \frac{\text{CA}}{H}$$

$$\text{Cos } 53^\circ = \frac{F_x}{80 \text{ N}} \Rightarrow F_x = 80 \text{ N} (\text{Cos } 53^\circ) = 48.145 \text{ N}$$

$$\text{Sen } \theta = \frac{\text{CO}}{H}$$

$$\text{Sen } 37^\circ = \frac{F_y}{50 \text{ N}} \Rightarrow F_y = 50 \text{ N} (\text{Sen } 37^\circ) = 30.090 \text{ N}$$

$$\text{Cos } \theta = \frac{\text{CA}}{H}$$

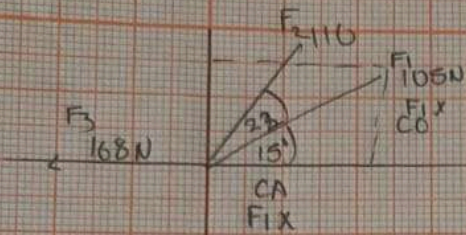
$$\text{Cos } 37^\circ = \frac{F_x}{50 \text{ N}} \Rightarrow F_x = 50 \text{ N} (\text{Cos } 37^\circ) = 39.931 \text{ N}$$

$$F_y = -70 \text{ N}$$

$$E F_y = 63.896 \text{ N} + 30.090 \text{ N} - 70 \text{ N} =$$

$$E F_y = 23.986 \text{ N}$$

$$E F_x = 48.145 \text{ N} - 39.931 \text{ N} = 8.214 \text{ N}$$



EFX

$$\text{Sen } 15^\circ = \frac{F_{1y}}{105} \rightarrow F_{1y} = 105 \text{N} (\text{sen } 15^\circ)$$

$$= 27.175$$

$$\text{Cos } 15^\circ = \frac{F_{1x}}{105} \rightarrow F_{1x} = 105 \text{N} (\text{cos } 15^\circ)$$

$$= 101.422$$

$$\text{Sen } 37^\circ = \frac{F_{2y}}{110 \text{N}} \rightarrow F_{2y} = 110 \text{N} (\text{sen } 37^\circ)$$

$$= 66.199$$

$$\text{Cos } 37^\circ = \frac{F_{2x}}{110 \text{N}} \rightarrow F_{2x} = 110 \text{N} (\text{cos } 37^\circ)$$

$$= 87.849$$

$$E_{Fx} = 101.422 + 87.849 - 168 \text{N} = 21.271$$

$$E_{Fy} = 27.175 + 66.199 = 93.374 \text{ N}$$

$$C = \sqrt{(21.271)^2 + (93.374)^2}$$

$$C = \sqrt{452.455 + 8718.703}$$

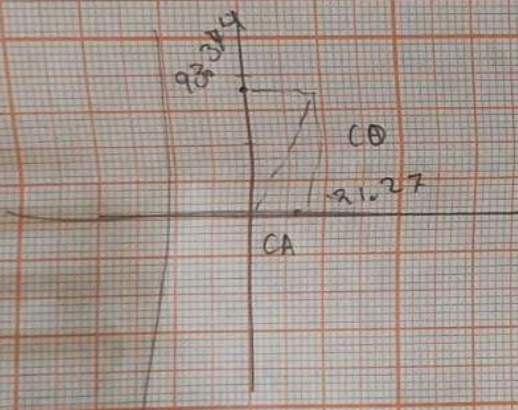
$$C = \sqrt{9171.158}$$

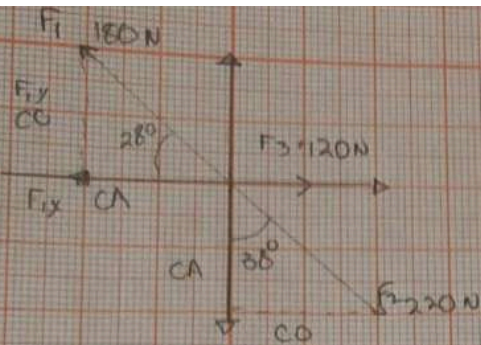
$$C = 95.766 \text{ N}$$

$$\text{Tan } \theta = \frac{93.374}{21.271}$$

$$\theta = \text{Tan}^{-1} - 4.369$$

$$\theta = 77.166^\circ$$





$$\sin \theta = \frac{CO}{H}$$

$$\sin 28^\circ = \frac{F_{1y}}{180N}$$

$$F_{1y} = 180N (\sin 28^\circ) = 84.60N$$

$$\cos \theta = \frac{CA}{180N}$$

$$\cos 28^\circ = \frac{F_{1x}}{180N}$$

$$F_{1x} = 180N (\cos 28^\circ) = 158.93N$$

$$F_{2x} = 220N (\sin 38^\circ) = 135.44N$$

$$F_{2y} = 220N (\cos 38^\circ) = 173.36N$$

$$\Sigma F_y = 84.60N + 173.36 = 257.96N$$

$$\Sigma F_x = -158.93N + 135.44N + 120N = 96.51N$$

$$C = \sqrt{(88.86)^2 + (96.51)^2}$$

$$C = \sqrt{7,896.09 + 9,314.18}$$

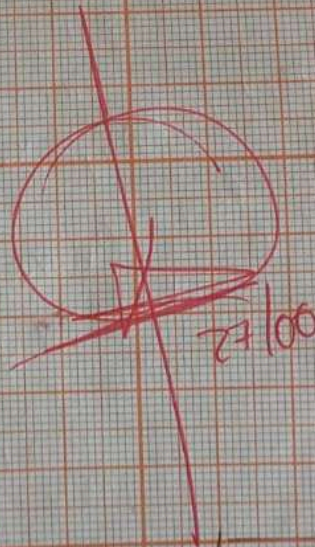
$$C = \sqrt{17,210.27}$$

$$C = 131.16N$$

$$\tan \theta = \frac{CO}{CA}$$

$$\tan \theta = \frac{-88.86}{96.51}$$

$$\theta = 42.63^\circ$$



131.16

131.16

CO

CA

